

REMARKS

Reconsideration of the present application as amended is respectfully requested. Claims 12-19, 30-37 and 39-41 are pending. Claims 12, 13, 18, 19, 30, 32-34, 36-37, and 39-40 are amended. Claim 38 is canceled. Claim 41 is new.

Claim Objections

The Examiner has rejected claim 32 under 35 U.S.C. §112. Applicant has amended claim 32 in the manner suggested by the Examiner to correct the inconsistent reference.

Claim Rejections - 35 U.S.C. § 102

The Examiner has rejected claims 12, 13, 15, 18, 19, 31-33, and 35 under 35 U.S.C. 102(e) as being anticipated by Weber et al. (US Patent 6,324,069) (hereinafter Weber). The Examiner has also rejected claims 12-17, 19, and 30-40 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,048,656 to Akram et. al. (hereinafter Akram) in view of U.S. Patent Publication No. 2003/0042035 to Myers et al (hereinafter Myers).

Claim 12

Independent claim 12, has been amended to clarify that Applicant's method utilizes a pair flow modifiers to form an adjacent border along only two sides of the device placement location to separate a mold flow into two or more mold flows to prevent trapped air. Clear and unambiguous support can be found in Fig. 4A and paragraph 0026 of the specification.

It is Applicant's position that Weber does not disclose flow modifiers forming a border on only two opposite sides of the device placement location. In view of the Examiner's interpretation of Weber, Applicant wishes to emphasize Weber merely discloses "the standoffs could be arranged in a variety of ways with the only requirement that there is a passage for the underfill material to pass around the standoffs during the underfilling process (Weber 6:16-6:19). Beyond this generality, Weber discloses only a tripod arrangement, a four corner arrangement (Fig. 8), and a "continuous stand off with apertures" embodiment.

Thus, Applicant respectfully submits that Weber fails to disclose all the elements of Applicant's amended claim 12.

Similarly, Akram merely discloses a dam which substantially surrounds the device 110 (Figure3), not a pair of flow modifiers bordering only two sides of the die placement location. Akram specifically states, "a dam 120 is formed as a right angle with one leg lying substantially parallel to the front wall 112 and with one leg lying parallel to the sidewall 115 of the flip-chip 110." No other embodiments are provided by Akram. Thus, Applicant respectfully submits Akram also fails to disclose flow modifiers bordering only two sides of the die placement location. Thus, Akram, even in combination with Myers, fails to disclose all the elements of Applicant's amended claim 12.

On this basis, Applicant respectfully requests Examiner to remove the 35 U.S.C. §102(e) and 35 U.S.C 103(a) rejections of claim 12.

Claims 13-17, 18, 30-32

Noting claims 13-17, 18, and 30-32 depend upon claim 12, Applicant asserts the cited references also fail to anticipate or render obvious claims 13-19 for at least the same reasons as those provided for claim 12. On these basis, Applicant respectfully requests Examiner to remove the 35 U.S.C. §§102(e) rejections from claims 13, 15, 18-19, 31-32.

Claim 19

Applicant further notes that dependent claim 19 has been amended to specify the flow modifiers further abut an adjacent device placement location. This amendment finds clear and unambiguous support in Fig. 1, wherein the flow modifier is depicted to span the entire space between two adjacent devices, 103 and 105. Applicant respectfully submits neither Weber or Akram disclose a flow modifier which abuts two adjacent die. On this basis, Applicant respectfully requests Examiner to remove the 35 U.S.C. §§102(e) rejection from claim 19.

Claim 33

Applicant has amended independent claim 33 to include the limitations of amended claim 12 with the additional feature of bifurcating each of said pair of flow modifiers to singulate said device placement location from an adjacent device placement location. Thus, as claimed, a flow modifier positioned between the device placement locations is severed during die singulation the process. As shown in Fig. 10, the singulated die may then rely on the flow modifier as a component of the molded package. This subject matter finds clear and unambiguous support in Fig. 10 and paragraphs [0036] and [0037] in the specification.

Applicant submits neither Weber or Akram disclose singulating the device placement locations by bifurcating (by splitting, cutting, etc.) the flow modifier. On this basis, Applicant respectfully requests Examiner to remove the 35 U.S.C. §102(e) and 35 U.S.C. 103(a) rejections of claim 33. Applicant notes dependant claims 34 and 35 should also be allowable for at least these same reasons.

Claim 36

Applicant has amended independent claim 36 to specify forming a pair of flow modifiers on the substrate bordering two opposite sides of a first and second die placement location. Thus, each flow modifier extends along a single side of more than one die placement location, adjacent to more than one die. This subject matter is unambiguously supported in Fig. 6, where flow modifiers 109 extends along two sides of the dice 107 and 105. Applicant submits Akram fails to disclose such a feature. On this basis, Applicant respectfully requests Examiner to remove the 35 U.S.C. 103(a) rejection of claim 33. Applicant notes dependant claims 37 and 39-41 should also be allowable for at least these same reasons.

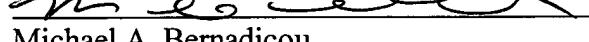
Applicant respectfully submits that in view of the amendments and supporting arguments set forth herein, the present application is in condition for allowance.

Pursuant to 37 C.F.R. 1.136(a)(3), applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully submitted,

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